

ARB Workshop to Discuss Updated Framework for California Clean Air Act Implementation Guidance

Workshop: Thursday June 15, 2000
10:00 a.m. to 2:00 p.m.
Air Resources Board
2020 "L" Street, Lower Level
Sacramento, California 95814

Attached: **Preliminary Concepts on Updated Framework for
California Clean Air Act Implementation Guidance**

We encourage your oral or written comments on these concepts and any other issues you believe should be addressed as part of this guidance. To consider and reflect your comments in the staff report on this item, we will need to receive comments by June 16. We will post the staff report on our website at <http://www.arb.ca.gov/planning/ccaa/ccaa.htm> approximately a month before the July 20, 2000 Board meeting for the formal public review and comment period.

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PRELIMINARY CONCEPTS ON UPDATED FRAMEWORK FOR CALIFORNIA CLEAN AIR ACT IMPLEMENTATION GUIDANCE

Background

The California Clean Air Act (CCAA) provides a comprehensive and effective framework for air quality planning to meet the State Ambient Air Quality Standards (State standards) and protect public health. Significant progress has been made since California's first CCAA plans were adopted in the early part of the past decade. Our understanding of air pollution and the technical tools used to craft air quality plans have improved significantly. Control measures adopted by the local districts and the Air Resources Board (ARB) have resulted in air quality improvements in many areas of the state, bringing these areas closer to the state and federal ambient air quality standards. Even with these successes, however, a substantial challenge remains.

Most areas of California continue to violate the State standards. As shown in the attachment, 29 of the State's 35 air pollution control and air quality management districts contain areas that are nonattainment for the State 1-hour ozone standard. In 1999, the State ozone standard was exceeded on 122 days in the San Joaquin Valley, 111 days in the South Coast Air Basin, and 20-80 days in other major urban areas and rural communities downwind of urban areas.

The next decade is a critical one for air quality planning. It is time to prepare triennial updates to the CCAA plans to continue expeditious progress towards meeting the State ozone standard. In many urban areas, more needs to be done to comply with the federal 1-hour ozone attainment deadlines. Planning may soon be underway as well for the federal 8-hour ozone standard. The year 2000 provides an opportune time to refocus our efforts on the goals of the CCAA and establish the path for the upcoming years. This path must ensure that the next generation of clean air strategies reflects the best available science and supports efforts to meet the health-based air quality standards established by both the State and federal government.

The local air districts developed their initial CCAA plans in either 1991 or 1992. At that time, photochemical urban airshed models that would allow districts to develop attainment demonstrations for the State ozone standard were not yet available. ARB deferred the requirement for ozone attainment demonstrations, pending the development of adequate modeling capabilities.

In 2003, the capability to conduct photochemical modeling will be available and we can then project the level of control and time needed to reach the State ozone standard. In response, ARB will no longer defer the requirement for attainment demonstrations based on photochemical modeling in the CCAA plans. These demonstrations will be a significant undertaking and we believe it is appropriate to update guidance that was previously developed for implementation of the CCAA to reflect current circumstances and available technical data.

CCAA Roles

Under State law, the governing board of ARB has the primary responsibility for ensuring the CCAA requirements are met. ARB has dual roles as both partner and oversight agency in the CCAA plans. As partners, local air districts and ARB staff develop the technical elements of the plans. ARB and the local districts, together with local transportation agencies and other state and federal agencies, are responsible for reducing emissions from pollutant sources under each agency's authority. ARB is responsible for ensuring adequate coordination and consistency between districts' air quality attainment strategies, reviewing and approving plans, monitoring progress, and tracking and enforcing compliance with the provisions of the CCAA.

ARB staff is beginning an effort to develop a 2001 Statewide Emission Reduction Strategy to identify new measures for mobile sources, consumer products, and fuels to continue our progress toward clean air. This Strategy will be considered by the full ARB in 2001. ARB will also work with federal and other state agencies to identify additional measures that can be adopted in the upcoming years to achieve emission reductions from sources under their authority. The measures in this Strategy will provide the basis for the State and federal elements of the 2003 CCAA attainment plans (as well as any revisions to State Implementation Plans under the federal Clean Air Act).

CCAA Guidance

To provide assistance to the districts in their plan development, ARB prepares implementation guidance. Existing guidance and technical assistance documents address all areas of the air quality planning requirements, including progress reporting, emissions inventory, monitoring and modeling, and transport assessment. Much of the existing guidance is still valid today, with the exception of the transportation-related elements that are no longer applicable because of changes to State law. In certain areas, new and updated implementation guidance for the CCAA is needed as we embark upon the development of attainment demonstrations for the State ozone standard.

Revisions to the guidance are necessary to reflect new data and planning tools and to make improvements to the planning process based on our experiences over the past ten years. We have seen significant improvements to the emissions inventory and our ability to forecast emissions. Regional air quality studies will provide the necessary data to develop attainment demonstrations based on photochemical modeling. And the development of innovative control programs, like incentives to accelerate introduction of clean engines, is furthering progress. In particular, updated guidance is needed to ensure that the emission reduction strategies incorporated into the CCAA attainment plans consider all necessary and feasible measures from all sectors – mobile, stationary, and area.

Our preliminary concepts that will shape the development of guidance for the 2003 comprehensive plans and subsequent plan revisions are summarized below. Areas that are addressed include preparation of the attainment plans including photochemical modeling and transport considerations, incorporation of the appropriate emission inventory, and identification of the emission reduction strategies for mobile, area, and stationary source categories. We will re-evaluate the concepts following public input at the workshop.

We will also prepare a staff report that describes the lessons we have learned since passage of the CCAA in 1988, as well as the statutory basis and need for each element that supports the proposed framework for future guidance. ARB staff will rely on Board direction on this framework as we prepare updated guidance for the CCAA in the upcoming months.

PRELIMINARY CONCEPTS FOR 2003 CALIFORNIA CLEAN AIR ACT PLANS TO ATTAIN THE STATE OZONE STANDARD

General Principles:

We have identified three general principles to guide the development of updated implementation guidance. These are: (1) all nonattainment areas need to have attainment plans that incorporate air quality modeling; (2) comprehensive emission reduction programs that take advantage of zero- and near-zero emission technologies will be needed to meet the State ozone standard in many areas; and (3) pollutant transport needs to be addressed in the planning process to ensure all areas of the State attain. Each of these is briefly described below

- *Attainment Plans:* Comprehensive plan revisions should be prepared for each nonattainment area for the State 1-hour ozone standard. Air quality modeling will be used in the development of the plans to identify the total reductions needed in each pollutant and design effective emission reduction strategies that will allow each area to attain the health-based State ozone standard as expeditiously as practicable.

For the many areas that will likely need several years and ambitious control programs that address all sources to reach attainment, the planning horizon needs to be long-term to ensure development of needed technologies and address future population and industrial growth. There is always a degree of uncertainty with long range planning. However, the CCAA requires a triennial reassessment of the plan strategies and provides the flexibility to revise plans without penalty.

- *Comprehensive Emission Reduction Program, Including Zero and Near-Zero Emission Technologies:* All sources of contributing pollutants need to be considered as potential candidates for effective emission reductions. The ultimate goal is to maximize the use of zero and near-zero emission technologies in areas that need further reductions to achieve health-based standards. Because technology continually evolves, air agencies need to ensure new technologies are routinely considered in plan revisions.

ARB also encourages agencies to report on progress and actions taken to reduce the health risks from other pollutants regulated under the CCAA, such as particulate matter. ARB will provide this information for sources under our control. Where feasible, plans should address multi-pollutant impacts from control measures and identify any potential benefits or tradeoffs between pollutants from defined ozone strategies.

- *Pollutant Transport:* The impacts of pollution transport will be addressed in the attainment demonstration to ensure all areas of the State reach attainment. Areas that receive transport should address the local emissions contribution. Upwind areas should mitigate their contribution to ozone levels in downwind areas. Upwind districts, downwind districts, and ARB will work together to develop a combination of emission reduction strategies that demonstrate attainment across the State.

A. 2003 CCAA PLANS (“PLANS”)

1. Applicability and Timing

- Attainment demonstrations will not be required for 2000 plan updates.
- The first comprehensive CCAA plans requiring attainment demonstrations for the State one-hour ozone standard will be due on or before December 31, 2003 and rely on the new field studies.
- Each plan prospectively covers the next three planning cycles (for 2003 plan, first planning cycle = 2003-2005, second cycle = 2006-2008, third cycle = 2009-2011).
- Each plan retrospectively assesses and quantifies progress made in the preceding planning cycle, not including the year the report is due (the 2003 plan looks back at progress from 2000-2002).

2. Planning Partners

- Districts that impact or are impacted by the transport of pollutants will coordinate on transport issues with each other and ARB.
- Districts in the Upper Sacramento Valley, the Sacramento metropolitan region, and the Central/Southern Mountain Counties will work together on plans for each of these three planning regions, for adoption by each district board.
- Transportation agencies need to be proactive partners with the districts and ARB in defining strategies to reduce transportation demand and its impact on air quality. These agencies also need to work together to ensure adequate peer review of the travel model and its inputs that form the basis for transportation growth projections in the attainment plan.
- State, federal, and local agencies need to work together to optimize the emission control strategy to meet attainment demonstration needs, considering measures in ARB's 2001 Statewide Emission Reduction Strategy (plus any updates), local stationary and area source emission controls, and local/regional strategies to reduce transportation emissions.

3. Scope of Plan

- All nonattainment areas will have attainment plans. ARB will assist districts that lack sufficient resources to develop complete planning documents.
- Rural areas that are primarily overwhelmed by an upwind district should ensure the local area has a strong and effective NSR program to address growth and prevent degradation. The control strategy should incorporate statewide measures and consider adoption of Suggested Control Measures, plus RACT/BARCT or other measures to control significant emission sources or mitigate the impacts of growth in the local area.

4. Emission Inventories and Growth

- Plans should include best estimate of current emissions from all sources of ozone precursors and account for growth of emissions from both permitted and non-permitted sources (mobile, stationary, and area) in the forecasted inventory. Emission forecasts should be included for each source sector, for the last year of each of the next three planning cycles (i.e., for the 2003 plan, forecasts for 2005, 2008, and 2011).
- Plans should identify separately the growth in emissions from new and modified stationary sources that are below the district's "no net increase" threshold.

- Plans should clearly define the key indicators of anticipated growth in the transportation system and compare with historic levels. Districts and ARB provide peer review of transportation plan assumptions on growth and travel modes.
- The inventory base year for the 2003 plans will be 2000 for regions covered by the Central California Ozone Study and 1997 for those areas within the modeling domain of the Southern California Ozone Study areas.

5. Emission Reduction Credits (ERCs)

- State law allows the creation and use of emission reduction credits. ARB staff believe it is important that the plan inventory and attainment demonstration accurately reflect and clearly delineate emissions from all ERCs.
- Emissions from existing ERCs should be quantified and itemized in the plan by category.
- New ERCs can be generated after attainment plan adoption if they reduce emissions included in the plan baseline.

[A California Air Pollution Control Officers Association (CAPCOA)/ARB group is developing recommendations regarding treatment of ERCs in plans]

B. ATTAINMENT DEMONSTRATION

1. Responsibility

- ARB performs modeling for most areas; joint effort with districts in South Coast, Bay Area, and San Joaquin Valley.

2. Design Value

- The design value is the level of pollution calculated for a given region based on air quality monitoring data, which must be reduced to meet the level of the standard. The design value will be determined by reviewing air quality monitoring data for a specific 3-year period (to be determined) and taking into account the local contribution, consistent with the CCAA.

3. Modeling Domains

- Two regional domains, Northern/Central California and Southern California, with sub-domains for individual planning regions.

4. Carrying Capacity

- Carrying capacity is the quantity of each pollutant that can be emitted in a region and still meet the air quality standard.
- Individual carrying capacities will be determined for each planning region within modeling domains, as supported by the models.
- An aggregate attainment inventory will be developed for the entire domain.

5. Addressing Transport

- CCAA plans need to ensure all areas of the State reach attainment. Upwind areas must address their share of responsibility for ozone levels in downwind areas. We expect the process to involve these steps:
 - Define the emission reduction strategy to address local emissions under district control in each planning region throughout the domain.
 - Run the model to determine if the strategies to address the local contribution in the upwind and downwind districts, combined with State and federal measures, will be adequate to demonstrate attainment under local and transport conditions.
 - If the strategies described above are not able to demonstrate attainment in both areas under transport conditions, ARB will work with the upwind and downwind districts to determine how to achieve the additional reductions needed for attainment.

6. Attainment Period

The CCAA requires districts to establish an attainment date for the State ozone standard. To differentiate this date from the attainment deadlines applicable under federal law, we recommend that districts use the term “attainment period,” which can be defined as a range of years.

- The attainment period will be projected through modeling and include new control strategies for the next three planning cycles or through the attainment period, whichever is sooner.
- Carrying capacities will be developed based on modeling simulations.
- Forecast emission inventories will include reductions from all emission reduction strategies identified in the plan.

- If reductions are adequate to meet carrying capacity within the first or second planning cycle, the plan should identify the planning cycle that will be the area's expected attainment period and assess impacts of expected growth on emissions through the next planning cycle.
- If reductions are adequate to meet the carrying capacity within the third planning cycle, the plan should identify that planning cycle as the area's expected attainment period.
- If reductions are not adequate to meet the carrying capacity by the end of the third planning cycle, the plan should:
 - examine the inventory forecast to determine the percent contribution from each major source sector;
 - examine long-term trends in air quality data and emissions, and estimate what additional reductions are needed overall for attainment; and
 - assess the possibility of attainment in subsequent planning cycles and identify the area's expected attainment period as a broader range.

7. **Reassessment**

- Each triennial plan revision will project emissions and measures over the next three planning cycles until the area attains.
- The attainment demonstrations should be revised as necessary to reflect significant changes in emissions inventory, control strategies or other model inputs.

C. EMISSION REDUCTION PROGRAMS

1. All Feasible Measures

- Design of the emission control program should be based on careful consideration of attainment demonstration needs and potential emission reductions from all sources (mobile, stationary, and area) and be subject to a full public process.
- All responsible State, federal and local agencies should identify potentially feasible control measures for sources under their authority. Agencies should continue defining achievable performance standards based on the most effective controls and rules already in place. Agencies should also identify emerging technologies and processes that may be feasible and cost-effective in the future to reduce emissions.

- We believe that feasible measures should include incentive programs and other effective voluntary strategies, especially for transportation sources. Agencies should create, expand, and/or leverage incentive programs and other voluntary strategies (like public information programs or energy efficiency measures) to achieve near-term benefits. Plans should identify the potential range of emission reductions, budgeted or proposed funding, expected level of participation, effectiveness, and other relevant factors for voluntary measures.
- In the 2001 Statewide Emission Reduction Strategy, ARB will identify all existing and anticipated future measures that may be needed, feasible, and cost-effective for mobile sources, fuels, consumer products, and pesticides under State and federal control.
- ARB will update the guidance document for stationary and area source controls "Identification of Achievable Performance Standards and Emerging Technologies" on a periodic basis. In consultation with CAPCOA, priority will be given to the source categories with the most significant emissions and potential for cost-effective reductions.

2. Nature of Plan Commitments

For areas that are very close to the State ozone standard and that project attainment in the first planning cycle, the focus of the emission reduction program will be measures to be implemented in that cycle. However, for areas farther above the standard projecting attainment in subsequent planning cycles, it is essential to have a longer planning horizon since it will likely take several years to adopt and implement all the necessary measures to reach attainment.

For the longer-term areas to identify an attainment period, it will likely be necessary to include measures for the second and third planning cycles that are not well defined. Unlike federal law that does not require periodic updates to the clean air plan, the CCAA reflects the reality that planning is a dynamic process and requires triennial plan revisions. These revisions are critical planning instruments that allow affected agencies to make mid-course adjustments, as new data become available and control measures become more defined or infeasible.

With this in mind, we are setting forth the concept that the CCAA plans should identify control strategies as either near-term (first planning cycle) or mid-term (second or third planning cycle).

- Near-term strategies are commitments to adopt specific measures in the first planning cycle, including an estimate of the emissions from the source category, the potential emission reduction benefits and the overall control effectiveness. These strategies may also include actions to seek/acquire incentive funding, or otherwise enable, voluntary emission reduction programs.
- Mid-term strategies are more general commitments to:
 - develop and propose measures to achieve a range of potential emission reductions from a source category (could be a broad description of reduction goal without specifying the regulatory approach), or
 - evaluate measures, technologies, lower-emitting processes, and/or voluntary programs for feasibility and potential development (might include advanced technology, further study measures, pilot projects, etc.).

At a minimum, plans need to provide an estimate of the total potential reductions for the combination of all mid-term strategies for use in the attainment period assessment. Because of the longer timeframe, these measures are less certain than the near-term measures. Mid-term strategies would be reassessed for feasibility and then further refined or removed at each triennial plan review.

3. **New Source Review (NSR)**

- Plans should identify ways to improve the NSR program and commit to implement any necessary and effective regulatory or administrative changes.
- Plans should also describe the methodology to be used to demonstrate that stationary source permitting program minimizes emissions from new and modified sources through the application of BACT, and result in a “no net increase” in emissions (at specified levels based on area classification).
- Plans should ensure the NSR program is accurately reflected through inventory and modeling.

[CAPCOA/ARB group is evaluating the need to strengthen NSR programs and developing recommendations for consideration in separate guidance]

4. **Cost-Effectiveness**

- The CCAA requires the cost-effectiveness of each potential control option to be determined. When evaluating control measures, agencies should assess and discuss whether explicit or implicit cost-effectiveness thresholds are hindering the application of technically feasible strategies.

5. **Transportation Strategies**

- Plans should include strategies that reduce transportation emissions and/or demand, including transportation control measures in the region's transportation plan.
- Plans should describe emission reduction strategies funded by Motor Vehicle Registration Fees, Congestion Mitigation and Air Quality Improvement Program funds, Carl Moyer program monies, and other funds, consistent with ARB guidance on prioritizing cost-effective transportation projects.
- In consultation with CAPCOA, ARB may provide and/or recommend analytical tools for use by local governments, transportation agencies and air districts to develop strategies that minimize the growth of VMT and maximize emission reductions.

D. ESTABLISHING AND ASSESSING EXPEDITIOUS PROGRESS

1. Establishing Future Expeditious Progress

- For all sources, the plan should identify the expected emissions for the final year of each of the next three planning cycles, considering adopted regulations and existing programs, as well as all near- and mid-term measures.

2. Assessing Past Progress

The CCAA requires local districts to submit reports to ARB on their progress on both implementing measures to attain the State ozone standard and reducing public exposure to ozone. We describe the specific approach for the two kinds of progress reports defined by the CCAA -- the annual report and the more comprehensive triennial report (which may be combined with any needed triennial plan revision).

Annual Progress Report

- The annual progress report is due to ARB on or before December 31 every year.

- The annual progress reports are short and simple, but should focus on the progress made in developing, adopting, and implementing rules in the district's plan during the most recent calendar year. The report should summarize, for each measure, the planned versus actual adoption and implementation dates. Where measures are pending, the report should include more detail such as anticipated workshop activity and projected adoption date. The report should explain any significant deviations from the original plan schedule for adoption and implementation.

Triennial Progress Report

- The triennial progress report is due to ARB on or before December 31 of each third year (2000, 2003, 2006, etc.).
- Past progress should be assessed quantitatively for the preceding planning cycle (2000-2002 for the triennial progress report due in 2003), with qualitative updates on measure activity in the year the report is due.
- The report should identify what progress was made toward meeting the plan commitments for adoption and implementation, and quantify the emission impact of each action using the evaluation methodology developed for the federal milestone compliance demonstration. ARB will provide this information for sources under State and federal jurisdiction.
- The report should identify, discuss, and address significant changes in the plan assumptions (for example, population/economic/transportation growth; emission inventory; funding; emission impacts of actions by upwind, State, and federal agencies). ARB will provide this information for sources under State and federal jurisdiction.
- The report should identify the cost-effectiveness (as a number or range) for each measure adopted in the preceding planning cycle.
- Reports should identify the total amount of dollars spent in the preceding planning cycle, and the associated emission reductions, for each incentive program (Motor Vehicle Registration Fees, Congestion Mitigation and Air Quality Improvement, Carl Moyer, etc.). ARB will provide this information for any incentive programs directly administered by the State.
- Reports should summarize the progress made in reducing emissions in each of the four major inventory sectors (mobile on-road, mobile off-road, stationary, and area) for the preceding cycle. ARB will provide this information for sources under State and federal jurisdiction.
- The 2003 comprehensive plan revision should include a summary of progress since 1990, in three year increments (1990, 1993, 1996, 1999, 2002). ARB will provide this information for sources under State and federal jurisdiction.

ATTACHMENT

Nonattainment Areas for the State 1-Hour Ozone Standard

| District | Nonattainment Counties and County Portions Included Within District Boundaries |
|---------------------------------|--|
| Amador County APCD | Amador |
| Antelope Valley APCD | Northeastern portion of Los Angeles |
| Bay Area AQMD | Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, western portion of Solano, southern portion of Sonoma |
| Butte County AQMD | Butte |
| Calaveras County APCD | Calaveras |
| Colusa County APCD | Colusa |
| El Dorado County APCD | Western portion of El Dorado |
| Feather River AQMD | Sutter, Yuba |
| Glenn County APCD | Glenn |
| Great Basin Unified APCD | Mono |
| Imperial County APCD | Imperial |
| Kern County APCD | Eastern portion of Kern |
| Mariposa County APCD | Mariposa |
| Mojave Desert AQMD | Northern portion of San Bernardino and far eastern portion of Riverside |
| Monterey Bay Unified APCD | Monterey, San Benito, Santa Cruz |
| Northern Sierra AQMD | Nevada |
| Northern Sonoma County APCD | Northern portion of Sonoma |
| Placer County APCD | Western portion of Placer |
| Sacramento Metro AQMD | Sacramento |
| San Diego County APCD | San Diego |
| San Joaquin Valley Unified APCD | Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare, and western portion of Kern |
| San Luis Obispo County APCD | San Luis Obispo |
| Santa Barbara County APCD | Santa Barbara |
| Shasta County AQMD | Shasta |
| South Coast AQMD | Los Angeles except for Antelope Valley APCD, Orange, western portions of San Bernardino and Riverside |
| Tehama County APCD | Tehama |
| Toulumne County APCD | Tuolumne |
| Ventura County APCD | Ventura |
| Yolo-Solano AQMD | Yolo and eastern portion of Solano |

Abbreviations: APCD = Air Pollution Control District; AQMD = Air Quality Management District.